# Complete Summary

## GUIDELINE TITLE

Pain in osteoarthritis, rheumatoid arthritis, and juvenile chronic arthritis.

## BIBLIOGRAPHIC SOURCE(S)

Simon LS, Lipman AG, Jacox AK, Caudill-Slosberg M, Gill LH, Keefe FJ, Kerr KL, Minor MA, Sherry DD, Vallerand AH, Vasudevan S. Pain in osteoarthritis, rheumatoid arthritis and juvenile chronic arthritis. 2nd ed. Glenview (IL): American Pain Society (APS); 2002. 179 p. (Clinical practice guideline; no. 2). [466 references]

## COMPLETE SUMMARY CONTENT



## SCOPE

### DISEASE/CONDITION(S)

Pain in osteoarthritis, rheumatoid arthritis, and juvenile chronic arthritis

### GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Rehabilitation
Treatment

### CLINICAL SPECIALTY

Anesthesiology
Family Practice
Geriatrics

Internal Medicine
Nursing
Nutrition
Orthopedic Surgery
Pediatrics
Pharmacology
Physical Medicine and Rehabilitation
Psychology
Rheumatology

## INTENDED USERS

Advanced Practice Nurses
Nurses
Occupational Therapists
Pharmacists
Physical Therapists
Physician Assistants
Physicians
Psychologists/Non-physician Behavioral Health Clinicians

## GUIDELINE OBJECTIVE(S)

- To inform clinicians and patients and their families that most arthritis pain can be relieved by available methods
- To promote prompt and effective assessment, diagnosis, and treatment of pain in patients with arthritis
- To provide clinicians with a synthesis of the literature and expert opinion for application to the management of arthritis pain
- To dispel unfounded fears that addiction results from the appropriate use of medications (opioids) to control arthritis pain

## TARGET POPULATION

- Adults who have osteoarthritis (OA) or rheumatoid arthritis (RA) of the extremities
- Children who have juvenile chronic arthritis (JCA)

## INTERVENTIONS AND PRACTICES CONSIDERED

### Assessment of pain

1. Numeric scales
2. Visual analogue scales
3. Verbal rating scales
4. Body map
5. Patient diary records and interviews

### Assessment of impact of pain on function

1. Health Assessment Questionnaire (HAQ)

2. Arthritis Impact Measurement Scales (AIMS)
3. Evaluation of biological, psychological, or social factors contributing to pain

Patient/family education and cognitive/behavioral interventions

1. Patient/family education programs
2. Cognitive-behavioral therapy
3. Relapse prevention methods
4. Stress management training

Pharmacologic interventions

1. Analgesics
    - Acetaminophen
    - Nonsteroidal antiinflammatory drugs (NSAIDs), including aspirin and nonselective and selective cyclooxygenase-2 (COX-2) inhibitors, with prophylactic gastroprotective agent, if necessary
    - Topical agents, such as capsaicin
    - Hyaluronic acid viscosupplementation for osteoarthritis
2. Disease-modifying antirheumatic drugs (DMARDs) for rheumatoid arthritis, such as sulfasalazine, methotrexate, leflunomide, etanercept, and infliximab
3. Systemic glucocorticosteroids (e.g., oral prednisone)
4. Intra-articular glucocorticosteroids
5. Opioids (e.g., morphine, oxycodone, hydrocodone)
6. Tramadol
7. Adjunctive pharmacotherapy for neuropathic pain (e.g., tricyclic antidepressants, anticonvulsants)

Dietary

Supplements and nutrition

1. Glucosamine sulfate
2. Chondroitin 4-sulfate
3. S-adenosylmethionine (SAMe)
4. Maintenance of balanced diet and weight loss if not at ideal weight

Exercise

1. Range-of-motion and flexibility
2. Muscle conditioning or strengthening
3. Aerobic exercise

Physical modalities

1. Transcutaneous electrical nerve stimulation (TENS)
2. Heat/Cold
3. Acupuncture
4. Magnets (considered but not recommended)
5. Orthotic devices (assistive and adaptive devices, shoes, compression gloves and wrist orthoses)

6. Referral to physical/occupational therapy

Surgical interventions

1. Surgical procedures
    - Total or resection arthroplasty
    - Arthrodesis
    - Arthroscopy
    - Osteotomy (hip, knee, ankle)

MAJOR OUTCOMES CONSIDERED

- Pain relief
    - Analgesic usage
    - Pain distress
    - Pain intensity
    - Other
- Functional status
    - Physical status
    - Psychological status
    - Activities of daily living
- Length of hospital stay
- Costs
- Patient preference
- Patient satisfaction
- Quality of life
- Complications
    - Severe--Life threatening
    - Moderate--Required treatment
    - Mild--No treatment needed
    - Other complications

## METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Evidence Reviews

A comprehensive literature review was conducted to locate recently published systematic evidence reviews and to identify areas in which new reviews were needed. See Appendix B of the technical companion document for research questions and systematic evidence reviews.

Types of Evidence Reviewed

The Panel developed criteria to guide the selection of articles to be reviewed for scientific evidence. Published articles about adults with pain from Osteoarthritis and Rheumatoid Arthritis and about children with Juvenile Chronic Arthritis were selected for review.

Excluded from the review were articles that were (1) letters to the editor, (2) descriptions of diagnostic techniques, (3) animal studies, (4) surveys reporting the incidence of pain, and (5) non-English language articles.

## Sources of Evidence Reviews

Four sources of evidence review were used: (a) Cochrane Collaboration Reviews, (b) other published systematic reviews, (c) reviews commissioned by the American Pain Society (APS), and (d) reviews conducted by APS panel and staff members. The Cochrane and other published reviews are listed in Tables 1 and 2 of the original guideline.

Of the reviews commissioned by APS, three were completed under the direction of Linda Tyler, PharmD, Drug Information Services, University of Utah Health Sciences Center. One was of the cyclooxygenase-2 selective nonsteroidal antiinflammatory drugs (see Table 3 of the guideline). The second was a review of the effects of unrelieved pain on the immune system, and the third the effects of opioids on the immune system. The latter two reviews are not summarized in the technical companion document. One review of opioids used in the treatment of osteoarthritis and rheumatoid arthritis pain was conducted by Peter Tugwell, MD, University of Toronto, chair of the Cochrane Musculoskeletal Group (see Table 4 of the original guideline). The remaining reviews were conducted by APS panel and staff members and are listed in Table 5 of the guideline. All reviews conducted by APS staff and by the Utah Drug Information Service used the same protocol for evaluating individual studies. A summary of the reviews done by APS staff is found in Appendix C of the technical report accompanying the original guideline.

## Literature Search Strategy

### Databases

MeSH Headings and Key terms were identified and used to generate a computer search of several computer databases. The databases were searched from their inception through September 2001. For reviews conducted by the Utah Pharmacy Group and APS Panel and Staff members, the following databases and dates were included:

- MEDLINE (1966-2001)
- CINAHL (1982-2001)
- Embase (1988-2001)
- PubMed (1966-2001)
- Healthstar (1975-2000)
- Current Contents (2000-2001)
- Science Direct (1980-2001)
- PsychInfo (1987-2001)
- Science Citation Indexes/Web of Science (1996-2001)
- Cochrane Database (1993-2001)

The APS staff searched for evidence to establish the effectiveness of various therapies on arthritis pain. The abstracts and citations retrieved were searched to identify research articles including meta-analysis of multiple well-designed controlled studies; well-designed experimental studies; well-designed quasi-experimental studies such as nonrandomized controlled, single-group pre-post, cohort, time series, or matched-case controlled studies; well-designed non-experimental studies such as comparative and correlational descriptive and case studies; and case reports and clinical examples.

Terms Searched

The Arthritis Pain Panel members established a list of questions, and the APS staff performed the searches necessary to locate scientific evidence establishing the effectiveness of the treatments. (Please refer to the technical report for the search strategies used by the APS staff.)

## NUMBER OF SOURCE DOCUMENTS

Not stated

## METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)
Weighting According to a Rating Scheme (Scheme Given)

## RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The type of evidence for recommendations was ranked ordinally in categories from I to V as follows:

I. Meta-analysis of multiple well-designed controlled studies.
II. Well-designed experimental studies.
III. Well-designed, quasi-experimental studies, such as nonrandomized controlled, single-group pre-post, cohort, time series, or matched-case controlled studies.
IV. Well-designed nonexperimental studies, such as comparative and correlational descriptive and case studies.
V. Case reports and clinical examples.

## METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

For each article reviewed, the following information was extracted and summarized: (1) type of arthritis pain (osteoarthritis, rheumatoid arthritis, juvenile chronic arthritis), (2) study design, (3) research based on theoretical framework, (4) number of subjects, (5) race, (6) setting, (7) age, (8) sampling

method, (9) intervention, (10) outcomes, (11) mode of measurement, (12) psychometric data reported for the measurement instruments, (13) type of data analysis, (14) study findings, (15) number and types of potential validity threats, (16) quality rating, (17) withdrawals for adverse reactions, and (18) funding for study. A summary of each topical review done by the American Pain Society staff is found in Appendix C of the technical report.

The evidence was classified by type and strength. The type of evidence for recommendations was ranked ordinally in categories from I to V.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline was developed by an interdisciplinary panel of experts in the management of arthritis pain. The panel combined scientific evidence review and expert judgment to develop recommendations for pain management. The guideline is based on the best evidence available at the time of writing. The science underlying pain management is emerging rapidly, however, and some recommendations may require modification as new evidence becomes available. Chapter II contains a description of the process and sources of evidence used in developing the guideline. The panel found other relevant guidelines, including the American College of Rheumatology's Recommendations for the Medical Management of Osteo-arthritis of the Hip and Knee (2000) and The American Geriatrics Society's Guideline for the Management of Pain in Older Persons (1998), useful in formulating some of the recommendations.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The strength and consistency of evidence for the recommendations summarize the evidence and note whether the evidence was generally consistent or inconsistent. Strength of evidence ranges from A, which is the strongest evidence, to D, which indicates that there is little or no evidence, or that only type V evidence exists. The strength and consistency of the recommendations are as follows:

1. There is evidence of type I or consistent findings from multiple studies of types II, III, or IV.
2. There is evidence of types II, III, or IV, and findings are generally consistent.
3. There is evidence of types II, III, or IV, but findings are inconsistent.
4. There is little or no evidence, or there is type V evidence only.

Panel consensus: Practice recommended based on the opinions of experts in pain management.

When the strength of evidence was A or B, the Panel's recommendations were based primarily on the evidence. When the strength of recommendation was

C or D, the Panel used the available empirical evidence, but based its recommendations primarily on expert judgment.

The term "Panel consensus" was used when the recommendation was a statement of panel opinion regarding desirable practice.

## COST ANALYSIS

The guideline developers reported that:

- Arthritis patient education programs, such as the Arthritis Self-Management Program (ASMP), are cost-effective. Taking into account the 20% reduction in pain and the 40% reduction in physician visits seen by Lorig and colleagues (1993) following the ASMP, costs were analyzed and the ASMP was determined to be a cost-effective program for patients and healthcare providers. This conclusion was supported by other analyses in similar studies, such as Kruger and colleagues (1998).
- Total joint arthroplasty specifically has been shown to be a cost-effective treatment when compared to nonsurgical treatments as found by Hirsch (1998) and Rorabeck and colleagues (1994). Consideration should be given to the cost of long-term medication and assistive care, as well as decreased work productivity. Over time, such costs may exceed the cost of surgery.
- Tables with ranges for costs of drugs are provided in the original guideline.

## METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Panel developed a working outline of content areas they would write for the Guideline. At each panel meeting, the content was reviewed and suggestions made for changes and/or additional content needed. When additional content was needed and panel members did not have the necessary expertise, the American Pain Society (APS) contracted with outside experts to provide this information.

During this process, nine drafts of the manuscript were developed and revised by the panel and APS staff. The first draft was reviewed by 63 experts in pain management. The peer reviewers included individuals nominated by professional organizations, consumer organizations, members of APS, and individuals. A list of peer reviewers is included in Appendix E of the technical report accompanying the guideline.

Letters were sent to 40 organizations requesting nominations for individuals to serve as peer reviewers. A sample letter that was sent to the organizations and the organizations are listed in Appendices F-1 and F-2 of the technical report. Those who met the criteria were sent a letter (see Appendices F-3 and F-4 of the technical report) asking them to serve as peer reviewers. Consumers were also invited to serve as reviewers (see Appendix F-5 of the technical report).

The sixth Guideline draft, a summary of the attributes of good guidelines, and an evaluation questionnaire were mailed to those who agreed to participate. The evaluation questionnaire was based on The Attributes of a Good Guideline as defined by the Institute of Medicine publication. A copy of this is found in Appendix G of the technical report. Peer reviewers completed the questionnaires, and many recommended changes in the manuscript and suggested additional references and articles. The responses to the questionnaire were collated and summarized. The quantitative results of the questionnaire for the first review are provided in Appendix H-1 of the technical report. The individuals from professional disciplines who completed the questionnaire are as follows: physicians, nurses, physical therapists, pharmacists, psychologists, and other health professionals. The summarized qualitative and quantitative data were sent to panel members. A Summary of Themes from the peer reviewers was provided to the panel (see Appendix H-2 of the technical report). This summary, as well as the narrative comments on the questionnaire, were reviewed by the panel at a 2-day meeting and were used to revise the manuscript. A second peer review of the revised draft of the manuscript was conducted using approximately one-half new reviewers and one-half of the reviewers from the first review. Fifty-one individuals participated in the second review. The 114 peer reviewers are listed in Appendix E of the technical report, except for those who chose to remain anonymous.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

These recommendations are presented in abbreviated form. Readers should refer to the text of the guideline document for a detailed discussion of each of the following topics.

Definitions for the type of evidence (I, II, III, IV, V) and the strength and consistency of evidence grades (A, B, C, D, Panel consensus) are provided at the end of the Major Recommendations field.

#### Pain Assessment

1. Treatment of people with arthritis should include, in addition to a complete history and physical examination, an initial comprehensive pain assessment and ongoing assessment of pain and functional status to identify, implement, and evaluate effectiveness of pain interventions. Pain assessment should focus on the type and quality of pain, source, intensity, location, duration/time course, pain affect, and effects on personal lifestyle. (Panel consensus)
2. Self-report should be the primary source of pain assessment when possible. Behavioral observations and physiologic measurements may provide additional information but should not be used as the primary source of pain assessment. Exceptions are preverbal children and nonverbal and cognitively impaired individuals, for whom behavioral observation should be the primary source for pain assessment. (B)
3. Selection of an appropriate pain assessment tool should take into consideration the person´s cognitive development, language, culture, and

preferences. Use the same pain assessment tool for the person on subsequent assessments to facilitate reliable evaluations of changes in the pain. (B)

4. Because pain is a major cause of disability in people with arthritis, assessment of functional status should be included in the pain assessment. When selecting a functional status measure, consideration should be given to the cognitive-developmental abilities of the person, the type of practice setting, the domains of function to be assessed, and the time and resources needed to complete the assessment. (B)
5. When arthritis pain is persistent or severe, the clinician should conduct a comprehensive assessment, including an evaluation of biological, psychological, or social factors that may be contributing to pain as well as an assessment of the overall impact of pain on function. (Panel consensus)

## Management of Pain in Osteoarthritis and Rheumatoid Arthritis

### Patient/Family Education and Cognitive Behavioral Interventions

6. A patient´s thoughts, feelings, emotions, and behavior, and his or her family´s response, can influence the arthritis pain experience. Therefore, education about pain, pain management options, and self-management programs should be communicated to the patient and family as an integral and cost-effective part of treatment. (A)
7. Cognitive-behavioral therapy (CBT) should be used to reduce pain and psychological disability and to enhance self-efficacy and pain coping. (B)

### Pharmacological Management of Pain in Osteoarthritis and Rheumatoid Arthritis

8. Analgesic and antiinflammatory medications are important in arthritis pain management but should be used concurrently with nutritional, physical, educational, and cognitive-behavioral interventions. (A)
9. Clinicians should consider efficacy, adverse side effects, dosing frequency, patient preference, and cost in selecting medication for pain management. (Panel consensus)
10. For the person with osteoarthritis (OA), acetaminophen is the medication of first choice for mild pain. There is little evidence that acetaminophen provides any benefit when peripheral inflammation is a causative factor for the pain. (A) For the person with moderate to severe pain and or inflammation, a cyclooxygenase-2 (COX-2) selective nonsteroidal antiinflammatory drug (NSAID) is the first choice, unless the person is at significant risk for hypertension or renal disorder. (B) In persons at increased risk for hypertension and edema, clinicians should use any NSAID cautiously due to the risk of exacerbating hypertension or edema. Nonselective NSAIDs should be considered only if the person is not responsive to or not able to take COX-2 selective NSAIDs and/or acetaminophen up to 4,000 mg per day, and only after a risk analysis is done to determine the risk for a significant NSAID-induced gastrointestinal (GI) complication. If such risk factors exist, then a prophylactic agent such as a proton pump inhibitor or misoprostol should be given along with the nonselective NSAID. (B) The person at risk for a cardiovascular event should be given a regular low dose of aspirin (between 75 mg-160 mg per day), whether the patient is treated with a nonselective or COX-2 selective NSAID. (B)

11. The injection of intra-articular glucocorticoids should be considered in those persons with OA who have significantly increased and inflammatory flare or extensive inflammation in one or a few joints. Intra-articular glucocorticoids can be administered at any time during the course of the illness. (B) Systemic glucocorticoids should not be used in persons with OA. The injection of hyaluronic acid supplements into the knee may be considered in persons with OA and knee pain who are unresponsive to acetaminophen, nonselective, and COX-2 selective NSAIDs, or who cannot take these medications. Hyaluronic acid can be administered at any time during the course of the illness. (B)
12. Tramadol may be used alone or in combination with acetaminophen or NSAIDs for therapy at any time during the treatment of a person with OA when NSAIDs alone produce inadequate pain relief. (C)
13. For the person with active rheumatoid arthritis (RA), disease-modifying antirheumatic drugs (DMARDs) are the first choice of pharmacotherapy. (B, C) For the person who is receiving any of the five known DMARDs shown by radiograph to slow damage from disease progression (sulfasalazine, methotrexate, leflunomide, etanercept, and infliximab as of this writing), acetaminophen may be used as a concomitant medication for mild pain. (A) However, because RA is an inflammatory disease, many more patients will benefit from concomitant therapy with an antiinflammatory medication. A COX-2 selective NSAID should be used as a concomitant medication for the person with moderate to severe pain with or without inflammation, unless there are clear risk factors for exacerbation of renal disease or the medications are not tolerated due to GI complications. (B) If the antiinflammatory medication and the DMARD provide inadequate pain relief, then acetaminophen should be added. (B) If gastrointestinal (GI) risk factors exist, then a prophylactic proton pump inhibitor or misoprostol should be given along with the nonselective NSAID. The person at risk for a cardiovascular event should be given a regular low dose of aspirin (between 75-160 mg per day), whether treated with a nonselective or a COX-2 selective NSAID. (B)
14. Low-dose oral glucocorticosteroids (less than 15 mg per day of prednisone or equivalent as a single dose) should be considered for short-term use in persons with RA. These medications have been shown to decrease progression of erosions for the first 2 years. When oral glucocorticoids are used, prophylaxis with a bisphosphonate, along with calcium supplementation and daily supplemental vitamin D to lower the risk of glucocorticoid-induced osteoporosis, should be considered. (B)
15. Intra-articular glucocorticoids should be used in patients with intense flares of OA or RA as evidenced by high degrees of inflammation and effusion in the joint; they can be used at any time during the course of the illness. (B)
16. Opioids should be used for patients with OA or RA when other medications and nonpharmacologic interventions produce inadequate pain relief and the patient´s quality of life is affected by the pain. (B) Morphine, oxycodone, hydrocodone, or other mu agonist opioids, as a single agent or combined with an NSAID or with acetaminophen, should be used for moderate to severe OA or RA pain that has not responded to other treatments. (B) The use of codeine and propoxyphene should be avoided because of their side effects and limited analgesic effectiveness. (B)

Dietary Supplements and Nutrition

17. Adults with OA should be encouraged to take 1,500 mg of oral glucosamine sulfate daily. (A)
18. People with arthritis should be advised to maintain an ideal body weight and adhere to a balanced diet containing adequate amounts of protein, fat, vitamins, and minerals. Adults should lose weight if their body mass index (BMI) is greater than 30, and follow a weight management program. Children should lose weight if their BMI is greater than the 95th percentile for children of the same age and gender. (B)

### Exercise and Physical Modalities in the Management of Arthritis Pain

19. All individuals should be encouraged and supported to participate in the minimum level of physical activity recommended by the U.S. Surgeon General (1996). Participate in at least 30 minutes of moderate physical activity on most days of the week. (B)
20. People with OA, RA, or juvenile chronic arthritis (JCA) who have difficulty in maintaining minimum levels of physical activity should be referred to appropriate conditioning exercise opportunities in the community and their progress followed routinely by the healthcare team. When necessary to prepare an individual for successful participation in a community-based or self-directed exercise program, referral should be made for physical therapy and/or occupational therapy to evaluate and reduce impairments in range of motion, flexibility, strength, and endurance and instruct in joint protection strategies. (B)

### Surgical Intervention

21. For optimal functional results, people with disabling arthritis should be referred for surgical care prior to the onset of joint contracture, severe deformity, and advanced muscular wasting and deconditioning rather than as a last resort. (B)
22. Unless there are medical contraindications, most people with arthritis, including obese and older persons, should be referred for surgical treatment when noninvasive treatment is ineffective and function is impaired. (B)
23. Surgical intervention should be considered when pain and functional limitations prevent the minimum amount of activity recommended by the U.S. Surgeon General (30 minutes of exercise on most days of the week to maintain cardiovascular health). (B)

### Treatment of Pain in Children and Older Adults with Arthritis

24. The assessment of pain should be ongoing in any child with JCA. A comprehensive and developmentally appropriate pain assessment should incorporate a pain history, the child´s self report, behavioral observations, parents´ assessment, and physiologic cues. (Panel consensus)
25. Analgesia for children should be similar to that for adults who experience pain. (Panel consensus)
26. Patient/family education should be provided on an ongoing basis to increase self-care skills and feelings of self-efficacy and to develop self-advocacy skills for negotiating with the healthcare system. (Panel consensus)

27. Cognitive-behavioral therapy (CBT) should be used to reduce pain and psychological disability and to enhance self-efficacy and pain coping for children. (B)
28. Appropriate interventions to minimize pain and anxiety related to diagnostic and therapeutic procedures should be an integral part of the management of children with arthritis. The child and parent should be adequately prepared for any procedure, and interventions should be individualized for the child and the procedure and administered prophylactically. (B)
29. Whenever conscious or deep sedation is required to perform any procedure, the guidelines developed by the American Academy of Pediatrics for patient monitoring and resuscitative equipment should be followed. (B)
30. The antiinflammatory and analgesic benefits of nonsteroidal antiinflammatory drugs (NSAIDs) should be weighed against the potential risk, particularly in older people. In the person who is at increased risk for a serious upper gastrointestinal (GI) adverse event, gastroprotective agents should be used even if nonselective agents are given at low doses. (B)

Definitions

Type of Evidence

I. Meta-analysis of multiple well-designed controlled studies.
II. Well-designed experimental studies.
III. Well-designed, quasi-experimental studies, such as nonrandomized controlled, single-group pre-post, cohort, time series, or matched-case controlled studies.
IV. Well-designed nonexperimental studies, such as comparative and correlational descriptive and case studies.
V. Case reports and clinical examples.

Strength and Consistency of Evidence

A. There is evidence of type I or consistent findings from multiple studies of types II, III, or IV.
B. There is evidence of types II, III, or IV, and findings are generally consistent.
C. There is evidence of types II, III, or IV, but findings are inconsistent.
D. There is little or no evidence, or there is type V evidence only.

Panel Consensus: Practice recommended based on the opinions of experts in pain management.

## CLINICAL ALGORITHM(S)

The original guideline contains algorithms for 1) The Management of Pain in Osteoarthritis; 2) The Management of Pain in Rheumatoid Arthritis; 3) The Management of Pain in Children with Arthritis.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The strength and consistency of the evidence supporting the recommendations ranges from A, which is the strongest evidence to D, which indicates there is little or no evidence, or that only type V (i.e., case reports and clinical examples) exists. In the absence of level A or B evidence, the panel used the available empirical evidence, but based its recommendation primarily on expert judgment. In these instances, the term, "Panel consensus," was used.

The type of evidence and/or expert judgment supporting each recommendation is identified and graded in the "Major Recommendations" section of this summary.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

- Recognition, assessment, treatment, and control of pain
- Improvement in function and quality of life
- Avoidance of possible toxic effects of therapy
- Alleviation of associated costs (e.g., healthcare expenditures, disability compensation, lost production, lost tax revenue)

### POTENTIAL HARMS

#### Adverse effects of medication:

Most drugs used in the treatment of arthritis pain can cause adverse effects. Specific adverse effects and cautions/contraindications to use of individual drugs are identified in tables in the original guideline document.

#### Exercise:

- High intensity isometric contraction may decrease local blood flow, increase intra-articular pressure/joint contact force, increase blood pressure. To lessen unwanted effects, exhale during contraction, avoid Valsalva´s maneuver, develop force gradually, avoid maximal contraction.
- Increased force across an unstable or inflamed joint may increase biomechanical stress. To lessen unwanted effects, avoid power gripping and deforming forces on involved hands/wrists. Do not include actively inflamed joints in resistive exercise.

#### Complications of surgical interventions:

Most surgical interventions carry risks of complications. The primary concern about total joint arthroplasty is polyethylene wear, in which small particles of polyethylene debris can incite an inflammatory response with the release of biologic factors. This can result in osteolysis of surrounding bone, which can lead to the failure of the total joint arthroplasty. Additional concerns/issues with specific surgical procedures are detailed in tables in the original guideline.

## CONTRAINDICATIONS

### CONTRAINDICATIONS

Contraindications for aspirin and all salicylates: Bleeding ulcers, hemophilia, angioedema, nasal polyps associated with asthma, thrombocytopenia. Aspirin is also contraindicated in children in the presence of fever or other viral disease because of its association with Reye's syndrome.

Contraindications for celecoxib (Celebrex): Severe hepatic impairment; allergic reaction to sulfonamides and aspirin; preexisting asthma.

Contraindications for rofecoxib (Vioxx): Advanced renal disease; asthma or allergic type reactions to aspirin or other nonsteroidal anti-inflammatory drug.

Contraindication for sulfasalazine: Sulfa allergy

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

An examination of the tables of scientific evidence in Chapter II of the original guidelines shows that evidence frequently is sparse or inconsistent, particularly for children and older adults. Most of the medication studies have been conducted to gain Food and Drug Administration approval or for marketing purposes. They often are narrowly focused on patient population or condition and do not provide information that is readily generalizable to other clinical populations, ages, and conditions. The extrapolation of experience with medications commonly used in one clinical population to another population requires considerable dependence on the use of expert judgment in making recommendations regarding their use in pain related to arthritis.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Living with Illness

### IOM DOMAIN

Effectiveness
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Simon LS, Lipman AG, Jacox AK, Caudill-Slosberg M, Gill LH, Keefe FJ, Kerr KL, Minor MA, Sherry DD, Vallerand AH, Vasudevan S. Pain in osteoarthritis, rheumatoid arthritis and juvenile chronic arthritis. 2nd ed. Glenview (IL): American Pain Society (APS); 2002. 179 p. (Clinical practice guideline; no. 2). [466 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2002

### GUIDELINE DEVELOPER(S)

American Pain Society - Professional Association

### SOURCE(S) OF FUNDING

The following companies have contributed to a common American Pain Society (APS) Guidelines Program Fund that is used for the support of all APS evidence-based clinical practice guidelines:

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- Hoecht Foundation
- Janssen Pharmaceutica
- Knoll Laboratories
- McNeil Consumer Healthcare
- Merck and Co., Inc.
- Pharmacia and Upjohn
- Purdue Pharma, L.P.
- Roxane Laboratories, Inc.
- Smithkline Beecham Pharmaceuticals

### GUIDELINE COMMITTEE

Clinical Practice Guidelines Committee
Arthritis Pain Management Panel (1999-2002)

### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Ada K. Jacox, PhD RN, Director, Clinical Practice Guidelines Program, American Pain Society; Carol D. Spengler, PhD RN, Consultant

Panel Members: Lee S. Simon, MD, Co-chair; Arthur G. Lipman, PharmD, Co-chair; Ada K. Jacox, PhD RN; Margaret Caudill-Slosberg, MD PhD; Lowell H. Gill, MD; Francis J. Keefe, PhD; Karen L. Kerr, MSN RN CS CPNP; Marian Adams Minor, PhD PT; David D. Sherry, MD; April Hazard Vallerand, PhD RN; Sridhar Vasudevan, MD

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Individuals involved in drafting clinical practice guidelines are charged by the American Pain Society (APS) with the responsibility to develop objective, complete, and balanced guidelines. Financial relationships with commercial companies could conflict with the responsibility when the company's products or services are related to the subject of the guideline. To ensure the integrity of APS and the Clinical Practice Guidelines Program, all participants in the development of clinical practice guidelines must submit a Conflict of Interest Disclosure Form to APS prior to participation in any guideline development activity.

All members of the Arthritis Pain Management Guidelines Panel have submitted a Conflict of Interest Disclosure form, which has been reviewed by the APS Executive Director, who has determined that no conflict of interest exists with any individual panel member. In addition, panel members disclosed financial relationships with commercial companies to all other panel members during panel meetings.

Individual Panel members currently have or have had relationships with the following pharmaceutical or biotechnology companies during the past 3 years:

Lee S. Simon. Research grants: Amgen, BMS, GD Searle Pharmacia, HMR (Aventis), Lilly, Proctor & Gamble; Consultant: Abgenix, Alexion, Forrest Labs, GD Searle, HMR, Immunex, Pfizer Lilly, Proctor & Gamble, Vertex, Wyeth; Speaker's Bureau: GD Searle Pharmacia, HMR (Aventis), Merck & Co, Inc., Pfizer, Wyeth.

Arthur G. Lipman. Research grants: Endo, Pharmacia; Consultant: Alza, Endo, Merck, Pharmacia, Purdue Pharma; Speaker's Bureau: Endo, Merck, Ortho-McNeil, Pharmacia, Purdue Pharma.

Margaret Caudill-Slosberg. Stockholder: Merck and Co., Inc.; Speaker's Bureau: Purdue Pharma.

Lowell H. Gill. Contract with Stelcast Co.

Francis J. Keefe. Consultant: BioLucent

David D. Sherry. Speaker's Bureau: Amgen, Wyeth-Ayerst

April Hazard Vallerand. Research grant: Janssen Pharmaceutica; Speaker's Bureau: Janssen Pharmaceutica, Purdue Pharma, Elan Pharmaceuticals--Nursing Advisory Panel

Ada K. Jacox, Carol D. Spengler. APS consultants receive funding from the APS Guidelines Program Fund.

## GUIDELINE STATUS

This is the current release of the guideline.

## GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available for purchase ($15 nonmembers; $10 members) from the American Pain Society (APS), 4700 W. Lake Avenue, Glenview, IL 60025-1485; Web site, www.ampainsoc.org. Orders can be placed via telephone, (847) 375-4715 or by fax, (847) 375-4777. An information request form is also available at the Society's Web site.

## AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Guideline for the management of pain in osteoarthritis, rheumatoid arthritis, and juvenile chronic arthritis (Technical Report). Glenview (IL): American Pain Society (APS); 2002. 184 p.

Print copies: Available for purchase ($15 nonmembers; $10 members) from the American Pain Society (APS), 4700 W. Lake Avenue, Glenview, IL 60025-1485; Web site, www.ampainsoc.org. Orders can be placed via telephone, (847) 375-4715 or by fax, (847) 375-4777. An information request form is also available at the Society's Web site.

## PATIENT RESOURCES

The following is available:

- Patient guide: managing osteoarthritis pain. Glenview (IL): American Pain Society (APS); 2003. 12 p.

Print copies: Available for purchase (Unit price [packet of 25]: $15 nonmembers; $11 members) from the American Pain Society (APS), 4700 W. Lake Avenue, Glenview, IL 60025-1485; Web site, www.ampainsoc.org. Orders can be placed via telephone, (847) 375-4715 or by fax, (847) 375-4777. An information request form is also available at the Society's Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

## NGC STATUS

The NGC summary was completed by ECRI on July 9, 2003. The information was verified by the guideline developer on August 4, 2003.

## COPYRIGHT STATEMENT



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